ANGER EXPRESSION AND LIFE STRESS AMONG BLACKS: THEIR ROLE IN PHYSICAL HEALTH

Clifford L. Broman, PhD, and Ernest H. Johnson, PhD
East Lansing and Ann Arbor, Michigan

This study examines the relationship between anger expression and life stress in a nationally representative sample of black adults. Recent research of mostly white subjects has shown that anger–hostility, one of the components of the Type A behavioral pattern, is an important predictor of health problems. The findings of the present inquiry indicate that anger–hostility is an important predictor of life stress, and that people with higher levels of anger conflict are more likely to experience negative life events. Moreover, negative life events and anger are shown to be independent predictors of health problems among blacks. The implications of these results for future studies of the health of black Americans are discussed.

The relationship between negative emotions, personality style, and health problems has been the subject of much recent study.[1–6] Although the bulk of this research has focused on the association of Type A behavior pattern (TABP) with coronary heart disease, recent evidence has suggested that the anger–hostility component of the TABP may be the most important predictor of coronary heart disease.[7–12] Investigations of the association of anger–hostility with other health problems have yielded important findings. For example, a study comparing the psychological attributes of women with malignant breast cancer with those of women with benign lumps showed that the two groups differed in how they handled their anger.[13] Higher rates of diagnosed breast cancer were found both for women who frequently suppressed and for those who frequently expressed their anger–hostile feelings. Problems with expressing anger have been related to the incidence of lung cancer,[14] diagnosed rheumatoid arthritis,[15] and hypertension[2] as well as mortality from all causes combined.[16]

Recent research in the field of health psychology has begun to study certain correlates of TABP. Some investigators have argued that TABP plays a crucial role in generating life stress.[10] Other research suggests that Type A individuals are likely to exhibit more aggressive and competitive interpersonal styles and become less cooperative when exposed to stressful situations than Type B individuals.[10,17] In still other research, Type A individuals have been shown to experience more stressful life events[18,19] and to engage in more negative health behaviors, such as the increased use of alcohol, than their non-coronary-prone Type B counterparts.[7,20]

While there is evidence that TABP may generate life stress and subsequent health problems, this relationship has not been studied for black Americans. Moreover, it is also unclear what particular aspects of TABP are the important or major predictors of life stress and health problems. As indicated earlier, there is some evidence that the anger–hostility di-

From the Departments of Sociology and Urban Affairs, Michigan State University, East Lansing, Michigan, and the Division of Hypertension, Department of Internal Medicine, The University of Michigan Medical Center, Ann Arbor, Michigan. Requests for reprints should be addressed to Dr. Clifford L. Broman, Department of Sociology, Michigan State University, East Lansing, MI 48824-1111.

mension of the TABP may be the most important predictor of coronary heart disease, but there are notably few investigations of the association between anger–hostility and life stress. Such study in black Americans is important for several reasons. First, black Americans are known to suffer from greater exposure to life stress than whites.[21,22] This raises the issue of whether blacks who are experiencing high levels of stress are further disadvantaged by how they handle their emotions. Second, several studies have shown that anger–hostility is an important correlate of hypertension and other health problems among black Americans.[1,6,23] If life stress is also generated by the experience and expression of anger–hostility, this could further increase the level of health problems among blacks.

In a previous report,[6] the relationship between anger expression, health problems, and indicators of life strain (eg, employment status, income and education level, marital status) was examined among a sample of black Americans (n = 1,277) in a national survey. Subjects indicating a high level of outwardly expressed anger during a period in which they experienced a "severe personal problem" had a significantly greater number of health problems. The expression of anger was found to significantly interact with one indicator of life strain (employment status) to predict health problems. Blacks who were unemployed were more likely to have a higher number of health problems if anger was expressed outwardly at a high level.

The goal of the present inquiry was to further study the pathological effects of anger expression among black Americans; the level of anger expression was studied in relationship to the experience of subsequent negative life events. Further, the role of anger expression and life stress in the health of black Americans was investigated. Because of a lack of literature on the topic concerning blacks, more specific hypotheses are difficult to draw from the literature. This study describes the basic relationship and proposes directions to future research on the role of emotional factors and stress in the health of black Americans.

METHODS

The data used in this study are from the National Survey of Black Americans (NSBA). The NSBA is the first nationally representative, cross-sectional sample of the adult (18 years and older) black population. The sample is a multi-stage, area probability one, drawn to ensure that every black household had an equal probability of selection. Special screening procedures were used to ensure location and correct identification of black households. The sampling and interviewing procedures resulted in 2,107 completed interviews, which represented a response rate of nearly 70 percent. More detailed information on the sampling and interviewing procedures can be found elsewhere.[24,25]

Measures

The measure of anger expression used in this analysis was obtained only for those respondents who reported experiencing a personal problem that caused them to feel they were at "the point of a nervous breakdown" (n = 1,322). All subjects answered a series of questions on how they responded to the personal problem. Assessment was made of the frequency (very often, fairly often, not too often, hardly ever, never) with which anger was expressed outwardly at people and objects in the environment during the period when the respondent experienced the personal problem. The measure of anger was drawn from answers to three questions: (1) Did you lose your temper? (2) Did you fight or argue with other people? and (3) Did it—the personal problem—cause problems in your family life? These three items were loaded together on the same factor (.73 to .93) and were found to be highly intercorrelated. It should also be noted that the first two are identical to items on the Anger–Out subscale of the Anger Expression Scale.[26] The response to each question was coded 4 (very often) to 0 (never), and then totaled to yield a scale of anger expression. This scale ranges from 0 to 12, and shows an acceptable level of reliability (alpha = .74). Since the study was focused on determining whether anger expression contributes to generating life stress, only data for respondents who experienced the personal problem seven or more months before the start of the present investigation are included (n = 713).*

*The respondents missing from these analyses (n = 1,394) differ demographically from the study sample. They are slightly older, less likely to live in urban areas, less likely to be previously married, and of lower educational level. There are no differences in health problems or anger expression. They are slightly less likely to experience a life event. However, the relationship between anger expression and life stress is similar regardless of whether a measure of current or past anger is used. Also, the results in Table 4 are replicated when the total sample for whom there is a measure of anger (n = 1,286) is examined. The decision to use a measure of past anger was made so that the temporal ordering of the study variables would be clear.

TABLE 1. CORRELATIONS, MEANS, AND STANDARD DEVIATIONS OF STUDY VARIABLES

Variable	1	2	3	4	5	6	7	8	9	10
Anger	—									
Health problems	−002	—								
Number of life events	252	−031	—							
Age	−208	436	−381	—						
Sex	−014	−170	−069	−054	—					
Urban	131	−098	082	−134	−020	—				
Married	−054	−020	−131	075	137	−104	—			
Previously married	−007	171	−106	318	−216	072	−662	—		
Employed	002	−300	−078	−236	152	002	104	−112	—	
Education	146	−365	117	−527	042	248	−030	−128	348	—
Mean	4.04	1.49	1.78	41.8	.35	.83	.40	.40	.59	11.3
Standard deviation	3.56	1.50	1.73	16.3	.48	.38	.49	.49	.49	3.3

Correlations >.073 are significant at $P < .05$.
Decimal points have been omitted.

Life events are measured by responses to questions asking : "Over the past month or so, have you had . . . money, job, family or marriage, criminal victimization . . . problems?" and "Have you had problems with . . . people outside your family, children, police, love life, racism?" Each question was coded for whether the problem was present (1) or absent (0). A simple count of the problems, of stressful life events, was made, resulting in an index that ranges from 0 to 9.

Health problems were measured similarly and consisted of the number of physician-diagnosed health problems relatively common to black Americans. These items were selected from pretesting in the pilot study for the NSBA data collection. Respondents were asked whether a doctor had told them that they had any of the following problems: arthritis, ulcers, stroke, nervous condition, circulatory problems, sickle cell anemia, cancer, hypertension, diabetes, liver or kidney problems, or any other health problems. Responses of "yes" were coded one and totaled to yield an index of the number of health problems. This index ranged from 0 to 8.

The demographic variables used in this analysis are age, sex, "urbanicity," marital status, employment status, and education. For purposes of multivariate analysis, the variables sex, "urbanicity," marital status, and employment status were dummy coded, where 1 = male, urban, married or previously married (widowed, divorced, or separated), and employed. In Table 1, correlations and descriptive statistics are presented for the variables and measures used in this study.

RESULTS

Table 2 is a summary of the results of the regression of life events on anger and demographic variables. Age, sex, marital status, employment status, and anger were significant predictors of life events. Younger people experienced a greater number of life events, as did women. The significant marital status variables indicated that the married and the previously married experienced fewer events than the never-married. The unemployed experienced more events than the employed. Most germane to this study, anger was shown to be positively related to life events. Blacks who experienced a greater level of anger in response to a stressful life problem in the past experienced a larger number of life events.

The next step in the analysis was to examine the impact of life stress on health. In Table 3, results of a regression of health problems on demographic variables and life events is presented. Among the de-

TABLE 2. REGRESSION OF NUMBER OF LIFE EVENTS ON ANGER AND DEMOGRAPHIC VARIABLES (n = 713)

Variable	Coefficient
Constant	41.8
Age	−.038**
Sex	−.260*
Education	−.042
Urban	.103
Married	−.580**
Previously married	−.492**
Employed	−.432**
Anger	.090**
R^2 =	.225

* P < .05
** P < .01

mographic variables, age, sex, education, and employment status were significant predictors of health problems, a result found in previous analyses of these data.[6] Life events also had an important impact on health problems. A greater number of life events were associated with a greater number of health problems.

The final stage in the analysis was a consideration of the joint influence of anger expression and the number of life events on health problems. Both anger expression and the number of life events were associated with a greater number of health problems (Table 4). An examination of the interaction between anger and the number of life events (not shown) revealed no evidence of interaction. Past anger expression and the number of life events were independent predictors of health problems for black Americans.

TABLE 3. REGRESSION OF HEALTH PROBLEMS ON LIFE EVENTS AND DEMOGRAPHIC VARIABLES (n = 713)

Variable	Coefficient
Constant	1.01
Age	.034*
Sex	−.359*
Education	−.054*
Urban	−.123
Married	−.009
Previously married	.030
Employed	−.444*
Number of life events	.092*
R^2 =	.267

* P < .01

TABLE 4. REGRESSION OF HEALTH PROBLEMS ON ANGER, LIFE EVENTS, AND DEMOGRAPHIC VARIABLES (n = 713)

Variable	Coefficient
Constant	.918
Age	.035**
Sex	−.361**
Education	−.562**
Urban	−.148
Married	−.021
Previously married	.009
Employed	−.437**
Anger	.033*
Number of life events	.079*
R^2 =	.272

* P < .05; ** P < .01

DISCUSSION

There are three important findings of the present research. First, anger expression or the frequency with which anger is directed outwardly at people and objects in the environment is an important predictor of negative life events for black Americans. A second key finding is that negative life events predict health problems for black Americans, and a third finding is that the number of negative life events and the frequent outward expression of anger are independent predictors of health problems among blacks. Therefore, the findings of the present study indicate that anger may be a risk factor for health problems via two pathways: by its association with negative life events, and by itself.

The current findings provide some evidence for the operation of these pathways. For example, the findings that anger conflict (anger–out) is related to a greater number of life events is supportive of the perspective that argues that people who experience difficulty in handling their anger are more likely to destroy important supportive relationships and networks with others that served to "buffer" or mediate the relationships between negative life events and health problems.[27] Although there is a notable lack of research relating anger to life events, the findings of the present study are quite similar to those reported elsewhere for adolescents.[28] In that study, those adolescent boys and girls who scored higher on the anger expression measure (anger–out) were more dissatisfied with their lives, had lower self-esteem, and experienced more negative life events.

It has been argued that individuals who have prob-

lems managing their anger behave in ways that enhance hostile interactions with others and generate more psychologic distress (eg, increased levels of anxiety and depression; disturbed ability to concentrate) for themselves.[29-31] Such persons through negative and combative interpersonal behaviors may "cause" many unpleasant life events (eg, job loss, divorce or marital difficulties, loss of friends and other avenues of social and emotional support) as well as engage in several negative health behaviors, such as excessive cigarette smoking and drinking, overeating, or ignoring early symptoms of fatigue and of ill health. These factors, in turn, may operate to increase susceptibility to infectious diseases and health problems. The present study has also shown that life events are positively related to health problems, and this is a finding reported previously in research on the general population.[32-34]

While data relevant to the first pathway shows that anger is a predictor of negative life events, which in turn predict health problems for blacks, the data relevant to the second pathway show that anger expression is an independent predictor of health problems. The maladaptive effects of anger in the etiology of psychoneurosis and depression have been long emphasized in clinical and experimental research concerned with the manifestation of personality disturbances.[29,35] As pointed out earlier, anger—particularly when manifested as chronic hostility—has recently been linked with TABP, coronary heart disease, malignant neoplasms, and death from all causes combined.[4,16] While most contemporary theorists view the experience and expression of anger as one of several outcomes of a process initiated by certain frustrating or stressful external events, Zajonc[36] has proposed that anger can be elicited by external events prior to cognitive assessment and interpretation. Some investigators have argued that the individual's reconstruction of the external events (eg, one's attributions concerning the intention of other persons involved) serves to elicit intense physiologic as well as psychologic arousal,[1,2,30] while others[31,35,37] have argued that the experience and expression of anger might be best conceptualized as a "transactional response" (to provocation) that serves to regulate the emotional discomfort usually associated with stressful and problematic interpersonal relationships.

In either case, how might the experience and expression of anger account for increased health problems? First of all, there appears to be an abundance of evidence indicating that when cognitive appraisal of a situation results in a sense of danger and threat or the need for continuous mental efforts to cope with the situation, a characteristic defense reaction or "fight/flight" pattern is observed. This pattern consists of an elevated blood pressure, increased pumping of blood by the heart with shunting of blood to skeletal muscles, and increased secretion of epinephrine, norepinephrine, and cortisol.[38,39] Anger (defined as an emotional state consisting of feelings of irritation, annoyance, fury, and rage, and heightened activation of the autonomic nervous system) may be the predominant emotional reaction that characterizes the defensive reactions to stressful and unpleasant events.[6,26] Although somewhat speculative, individuals with high levels of anger–conflict might experience excessive neuroendocrine and cardiovascular activity that contribute to the pathogenesis of several health problems. For example, if cortisol levels are increased during periods of anger conflict, this could potentiate both the metabolic and the cardiovascular effects of catecholamines, which could accelerate endothelial injury, the most accepted model of atherogenesis, by way of increased lipid mobilization.[11,27]

High levels of anger–conflict associated with the defense-reaction pattern could also be related to the depression of the immune function (eg, natural killer cell activity), where the end result would be a reduced ability to reject tumors. There is a strong need for research to examine these relationships among black populations.

It is entirely feasible that anger–hostility could also be related to increased cancer mortality as a function of the strained and unbalanced pattern of interactions with important sources of social support, such as family members, friends, and co-workers, that is generally exhibited when anger–conflict is a source of problematic interpersonal relationships. This hypothesis is in line with current findings by Graves and Thomas,[40] which show that cancer victims lacked a close relationship with their parents and had "early human ties" that were generally very disturbed and unsatisfactory.

In conclusion, the data are supportive of an association between health problems and both high levels of anger expression and negative life events in black Americans. Because of the cross-sectional nature of these data, definitive statements cannot be made as to whether problems with anger expression and negative life events precede or are a consequence of health problems for black Americans. Research to sort out

the mechanisms whereby anger–conflict and negative life events are translated into disease processes for blacks is strongly needed, given the substantially shorter life span for this racial group.

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